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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,781	03/29/2004	Michael S. Banik	BSEN122032	9503
26389	7590	05/18/2007		
CHRISTENSEN, O'CONNOR, JOHNSON, KINDNESS, PLLC 1420 FIFTH AVENUE SUITE 2800 SEATTLE, WA 98101-2347			EXAMINER SMITH, PHILIP ROBERT	
			ART UNIT 3739	PAPER NUMBER
			MAIL DATE 05/18/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/811,781	Applicant(s) BANIK ET AL.	
	Examiner Philip R. Smith	Art Unit 3739	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-17, 32-37, 56, 57 and 59-76 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-17, 32-37, 56, 57, 59, 60 and 69-76 is/are allowed.
- 6) ☒ Claim(s) 61 and 64-68 is/are rejected.
- 7) ☒ Claim(s) 62 and 63 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

- [01] Objections to the specification are withdrawn in view of the amendments of 2/16/2007.

Drawings

- [02] Objections to the drawings are withdrawn in view of the amendments of 2/16/2007.

Claim Objections

- [03] Objections to the claims are withdrawn in view of the amendments of 2/16/2007.

Claim Rejections - 35 U.S.C. 112, Paragraph Two

- [04] The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
- [05] The rejections of claims 56-59 in the Office action of 11/29/2006 are withdrawn in view of the amendments of 2/16/2007.

Claim Rejections - 35 USC § 102

- [06] Claim 61 is rejected under 35 U.S.C. 103(a) as being anticipated by Logan (6,692,251).
- [07] With regard to claim 61: Logan discloses an endoscope comprising:
- [07a] a flexible shaft ("barrel portion 16," 6/66) having a proximal end and a distal end and a working channel lumen ("heat tube 38," 8/49) therein;
- [07b] a hollow cap ("distal end 17," 7/45) having an internal cavity on the distal end of the shaft including a front face with an opening to the working

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channel of the endoscope (a cavity with an opening to the working channel is defined by "plastic ring structure 43," 9/39; see Figure 2);

[07c] a heat exchanger that is fitted within the internal cavity of the cap, the heat exchanger including:

[07d] a cooling channel through which a cooling liquid passes ("outer edge of array 32," 9/40);

[08] a circuit board ("collective array 32 on a substrate 34," 8/9) having one surface that contacts the cooling liquid ("heat sink 36," 8/44) in the cooling channel and another surface on which one or more light emitting diodes (8/14) are mounted.

Additional Claim Rejections - 35 USC § 102

[09] Claims 65-66 are rejected under 35 U.S.C. 102(b) as being anticipated by Avni (2003/0032860).

[10] Avni discloses an endoscope comprising:

[10a] a shaft having a proximal end, a distal end and a working channel ("working channel 38," [0081]);

[10b] a cap ("insertion section 22," [0076]) having an internal cavity and a front face positioned at the distal end of the shaft;

[10c] an insert that is fitted within the internal cavity of the cap and behind the front face, that includes:

[10d] an illumination source ("lamps 42," [0076]);

- [10e] a heat exchanger ("tip of the endoscope," as noted above) that supports the illumination source, the heat exchanger including a cooling channel (additional "channel 38," used for "irrigation," [0082]) in which a liquid is passed and is warmed by heat from the illumination source; and
- [10f] an image sensor ("color CCD array 50," [0076]) that produces imaging signals of tissue,
- [10g] wherein the heat exchanger includes a recess into which a lens assembly is fitted and aligned with the image sensor (see Figure 2).

Claim Rejections - 35 USC § 103

- [11] The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
- [12] Claim 64 is rejected under 35 U.S.C. 103(a) as being unpatentable over Logan (6,692,251) in view of Hess (6,734,893).
- [13] Logan discloses the entirety of claims 61, as noted above. Logan does not disclose a heat exchanger includes a temperature sensor that produces signals indicative of the temperature at the distal end of the endoscope.
- [14] Hess discloses in 6/1-9 that "[t]he temperature of the LEDs (25) is registered with a temperature sensor (24), e.g., a thermistor, for safety reasons." At the time of the invention, it would have been obvious to a person of ordinary skill in the art that the heat exchanger disclosed by Logan in view of Hecht include a thermistor as taught by Hess. A skilled artisan would be motivated to do so "for safety

reasons," e.g., to prevent injury to a patient.

Additional Claim Rejections - 35 USC § 103

[15] Claim 67 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ross (2002/0193664) in view of Chu (7,169,167), and in further view of Shie (6,480,389).

[16] Ross discloses an endoscope comprising:

[16a] a shaft having a proximal end, a distal end and a working channel ("insertion tube 22," [0037]);

[16b] a cap having an internal cavity and a front face positioned at the distal end of the shaft ("distal end of the insertion tube 22," [0037]);

[16c] an insert that is fitted within the internal cavity of the cap and behind the front face, that includes:

[16d] an illumination source ("LED chip 10," "mounted on a ceramic substrate 12," encapsulated in a clear epoxy substrate to provide a lens," [0035]);

[16e] a heat exchanger that supports the illumination source ("cooling means," [0011]; [0038]); and

[16f] an image sensor ("CCD chip," [0030]) that produces imaging signals of tissue.

[17] Ross does not disclose a working channel.

[17a] Chu discloses in 1/13-16 that "[e]ndoscopic devices for use in medical

procedures typically are passed through a working channel of an endoscope positioned in a body cavity in order to reach an operative site at a distal end of the endoscope.” At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a working channel in the endoscope of Ross. A skilled artisan would be motivated to do so in order to utilize surgical devices within the body cavity.

[18] Ross in view of Chu does not disclose that the heat exchanger including a cooling channel in which a liquid is passed and is warmed by heat from the illumination source, wherein the illumination source is mounted on a circuit board having a surface that contacts the liquid within the cooling channel.

[18a] Shie discloses a “solid-state light emitting device package 1” comprising “a metallic substrate 10, at least one LED chip 20, a fluidic coolant 30, a light transparent housing 40 and a printed circuit board (PCB) 50.” At the time of the invention, it would have been obvious to a person of ordinary skill in the art that the “LED chip 10” and “cooling means” disclosed by Ross be constructed so as to include a cooling channel in contact with an illumination source mounted on a circuit board, as taught by Shie. A skilled artisan would be motivated to do so in order to prevent “an increase in temperature, ... suitable for an application of high intensity and high current” (1/55).

Additional Claim Rejections - 35 USC § 103

- [19] Claim 68 is rejected under 35 U.S.C. 103(a) as being unpatentable over Avni (2003/0032860) in view of Hess (6,734,893).
- [20] Avni discloses the entirety of claims 61, as noted above. Avni does not disclose a heat exchanger includes a temperature sensor that produces signals indicative of the temperature at the distal end of the endoscope.
- [21] Hess discloses in 6/1-9 that "[t]he temperature of the LEDs (25) is registered with a temperature sensor (24), e.g., a thermistor, for safety reasons." At the time of the invention, it would have been obvious to a person of ordinary skill in the art that the heat exchanger disclosed by Logan in view of Hecht include a thermistor as taught by Hess. A skilled artisan would be motivated to do so "for safety reasons," e.g., to prevent injury to a patient.

Allowable Subject Matter

- [22] Claims 12-17,32-37,56-57,59-60,69-76 are allowed.
- [23] Claims 62-63 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
- [24] If claims 66 and 67 were both incorporated in to claim 65, claim 65 would be allowable.

Response to Arguments

- [25] Applicant's arguments have been considered but are moot in view of the new

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ground(s) of rejection.

Conclusion

[26] **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

[27] A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

[28] Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip R. Smith whose telephone number is (571) 272 6087 and whose email address is philip.smith@uspto.gov. The examiner can normally be reached between 9:00am and 5:00pm.

[29] If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Linda Dvorak can be reached on (571) 272 4764.

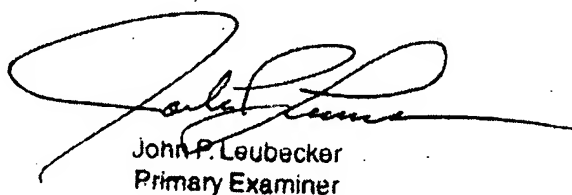
[30] Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published

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applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to be 'P. R.' or similar, written in a cursive style.A handwritten signature in black ink, appearing to be 'John P. Leubecker', written in a cursive style.
John P. Leubecker
Primary Examiner